UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,322	06/13/2001	Walter H. Runkis		5476

20529 7590 03/16/2009

THE NATH LAW GROUP
112 South West Street
Alexandria, VA 22314

EXAMINER	
FISHER, ABIGAIL L	

ART UNIT	PAPER NUMBER
1616	

MAIL DATE	DELIVERY MODE
03/16/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/880,322	RUNKIS, WALTER H.	
	Examiner	Art Unit	
	ABIGAIL FISHER	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *80-98* is/are pending in the application.

4a) Of the above claim(s) *84-85, 92 and 97* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *80-83,86-91,93-96 and 98* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Receipt of Response to Election/Restriction filed on November 6 2008 is acknowledged. Claims 1-79 were/stand cancelled. Claims 80-98 were added.

Election/Restrictions

Applicant's election with traverse of water-soluble sulfamic acid in the reply filed on November 6 2008 is acknowledged. The traversal is on the ground(s) that a search covering plant growth promoters would cover most, if not all, of the claimed species. This is not found persuasive because this is an unsupported allegation. (Ultimate determination of the accuracy of the statements cannot possibly be determined until after examination). Furthermore, as indicated by the examiner oil-soluble sulfamic acid compounds and water-soluble sulfamic acid compounds possess different properties as those that are water-soluble would not be oil-soluble.

The requirement is still deemed proper and is therefore made FINAL.

The examiner also notes applicant's previous election with traverse of iron carbonate in the reply on January 9 2007.

Status of claims

Claims 80-98 are pending in the application. Claims 84-85, 92 and 97 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely

traversed the restriction (election) requirement in the reply filed on November 6 2008 and January 9 2007. Accordingly, claims **80-83, 86-91, 93-96 and 98** are being examined on the merits herein.

Claim Objections

Claim 81 is objected to because of the following informalities: the magnesium symbol Mg is incorrectly spelt as Me. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 80-83, 86-87, 89-91, 93-96 and 98 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification discloses chemicals, such as compounds of the formula $HSO_3NR_4R_5$ which meet the written description and enablement provisions of 35 USC 112, first paragraph. However, claim(s) 80-83, 86-87, 89-91 and 93-98 is(are) directed

to encompass sulfamic acid compounds, which the examiner equates as including derivatives based on the description of sulfamic acid compounds in the specification, which only correspond in some undefined way to specifically instantly disclosed chemicals. None of these sulfamic acid compounds/derivatives meet the written description provision of 35 USC § 112, first paragraph, due to lacking chemical structural information for what they are and chemical structures are highly variant and encompass a myriad of possibilities.

Additionally, the specification discloses chemicals, such as calcium nitrate and magnesium nitrate, which meet the written description and enablement provisions of 35 USC 112, first paragraph. However, claim(s) 81 is(are) directed to encompass any Ca^{2+}, Mg^{2+}, and N^{3-} moiety, which only correspond in some undefined way to specifically instantly disclosed chemicals. None of these moieties meet the written description provision of 35 USC § 112, first paragraph, due to lacking chemical structural information for what they are and chemical structures are highly variant and encompass a myriad of possibilities. Specifically, it is known in the art that not all calcium and magnesium moieties can be utilized for plant growth. For example, US Patent No. 4589914 to Cartwright is directed to herbicidally effective diphenyl ether compounds. As claimed the compounds can be agriculturally acceptable salts comprising agriculturally acceptable cations (claim 1). Examples of agriculturally acceptable cations include sodium, potassium, lithium, calcium and magnesium cations (column 1, lines 58-61). It is taught that these compounds are effective in preventing the growth of plant from seeds present in the soil (column 3, lines 57-64).

The specification provides insufficient written description to support the genus encompassed by the claim. **Note: MPEP 2163.**

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, (Fed. Cir. 1991), makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention.* The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

Univ. of Rochester v. G.D. Searle, 69 USPQ2d 1886, 1892 (CAFC 2004), further supports this by stating that:

> The appearance of mere indistinct words in a specification or a claim, even an original claim, does not necessarily satisfy that requirement. A description of an anti-inflammatory steroid, i.e., a steroid (a generic structural term) described even in terms of its functioning of lessening inflammation of tissues fails to distinguish any steroid from others having the same activity or function. A description of what a material does, rather than of what it is, usually does not suffice…. The disclosure must allow one skilled in the art to visualize or recognize the identity of the subject matter purportedly described. (Emphasis added).

With the exception of the above specifically disclosed chemical structures, the skilled artisan cannot envision the detailed chemical structure of the encompassed sulfamic acid compounds/derivatives or moieties regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. The chemical structure itself is required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (Fed. Circ. 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016, (Fed. Cir. 1991). In Fiddes v. Baird, 30 USPQ2d 1481, 1483, (Bd. Pat. App. & Int. 1993), claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class. The specification provided only the bovine sequence. Finally, University of California v. Eli Lilly and Co., 43 USPQ2d 1398, 1404, 1405 (Fed. Cir. 1997) held that:

> ...To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997); *In re Gosteli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) (" [T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant

> complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." *Lockwood*, 107 F.3d at 1572, 41 USPQ2d at 1966.

Furthermore, to the extent that a functional description can meet the requirement for an adequate written description, it can do so only in accordance with PTO guidelines stating that the requirement can be met by disclosing "sufficiently detailed, relevant identifying characteristics," including "functional characteristics when coupled with a known or disclosed correlation between function and structure." Univ. of Rochester v. G.D. Searle, 68 USPQ2d 1424, 1432 (DC WNY 2003).

Therefore, only the above chemically structurally defined chemicals, but not the full breadth of the claim(s) meet the written description provision of 35 USC § 112, first paragraph. The species specifically disclosed are not representative of the genus because the genus is highly variant. Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 USC § 112 is severable from its enablement provision. (See page 1115.)

Claims 80-81 and 83 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Claims 80 and 83 recite that the phosphate and/or nitrate salts are present in an amount effective for promoting plant growth. Claim 81 recites plant growth promoting effective amount of solution stable calcium, magnesium, and nitrogen moieties.

However the instant claims and specification provide no support for what

amounts would constitute effective amounts for these specific compounds. The instant specification provides no guidance as to what amounts are considered amounts effective for promoting plant growth. The instant examples may provide specific amounts for specific compounds however, the instant claims are directed to broad genus and support is not given for amounts for the genus of compounds. Furthermore the examples do not indicate if the amount of the examples which correspond to amounts of the whole compound and therefore the corresponding amount of the cation (for example calcium and magnesium) would be applicable to all calcium or magnesium species regardless of the cation. Or alternatively is the amount of the specific example only sufficient for that specific calcium or magnesium compound.

The specification provides insufficient written description to support the genus encompassed by the claim. **Note: MPEP 2163.**

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, (Fed. Cir. 1991), makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed*." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

Therefore, the full breadth of the claim(s) does not meet the written description provision of 35 USC § 112, first paragraph as the instant specification fails to provide description of what is an effective for promoting plant growth.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 80-83, 86-91, 93-96 and 98 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 93 recites the micronutrient containing compound 14eFanboron. The instant specification provides no support for what the compound is comprised of and the examiner can not determine from the art what would be in this type of compound. Therefore, the scope of the claim is vague and indefinite.

Claim 81 recites an amount of N^{-3} moieties. However, the instant specification provides no definition or example of compounds that would fall under this genus. Therefore, the resulting claim is indefinite as one of ordinary skill in the art would not be apprised of the metes and bounds of the desired patent protection of N^{-3} moieties. Since the specification provides no definition of this term, the examiner will interpret any nitrogen containing species as a N^{-3} moieties.

Claim 88 recites the formula $R^1(NR^2R^3)$ N $nHSO_3NR_4R_5$. This formula as currently written is vague and indefinite. Firstly, the examiner would like to point out that this is not the formula presented in the specification. The formula in the specification, which the same formula of US Patent 6204228 has the correspond formula: $R^1(NR^2R^3)_n$ $nHSO_3NR_4R_5$. Therefore the formula must be corrected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 80-83, 86-90, 93 and 98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhouse (US Patent No. 2237826, cited in the Office action mailed on 6/25/03) in view of Kirk-Othmer (Encyclopedia of Chemical Technology, 1997, cited in the Office action mailed on 2/2/05).

Applicant Claims

The instant application claims a composition comprising an amount of a reaction product of one or more sulfamic acid compounds and one or more water-insoluble macronutrient and/or micronutrient compounds, which reaction product is water-solution stable and an amount of phosphate and/or nitrate salts.

Specific claimed micronutrient compounds is iron carbonate.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Woodhouse is directed to fertilizer compositions. It is taught that phosphate rock may be decomposed by various mineral acids to give valuable fertilizer materials

generally referred to as superphosphates. It is taught that it is known in the art to add various nitrogen-containing materials to such superphosphates in processes of preparing complete or finished fertilizers (column 1, lines 4-10). It is taught that highly desirable nitrifying solutions may be prepared by the use of sulfamic acid or salts of sulfamic acids as one component. Salts of sulfamic acid include ammonium, sodium, calcium, magnesium, potassium or the like salts or mixtures thereof (column 2, lines 10-21). Sulfamic acid is taught as a good source of nitrogen for plant growth and miscible with water (column 2, lines 22-29). It is taught that the invention may be practiced by addition of sulfamic acid or its salts to the usual fertilizer materials such as superphosphate, double and triple phosphate, potash salts, organic materials, etc. (column 2, lines 35-40). Potash salts include potassium sulfate, chloride and nitrate; ammonium salts such as ammonium chloride, nitrate, sulfate carbamate, etc. (column 3, lines 1-7). It is taught that sulfamic acid may be advantageously incorporated into nitrogen containing or ammoniating liquids generally. For example, sulfamic acid may be in ammoniating solutions or nitrogen-containing solutions which have incorporated therein a wide variety of nitrogenous compounds including nitrates, ammonium salts and organic nitrogenous materials (column 3, lines 45-59).

Ascertainment of the Difference Between Scope of the Prior Art and the Claims *(MPEP §2141.012)*

While Woodhouse teach the formation of sulfamic acids salts such as ammonium, sodium, calcium, and magnesium, Woodhouse does not teach iron salts of sulfamic acids formed by the reaction of sulfamic acid with iron carbonate. However, this deficiency is cured by Kirk-Othmer.

Kirk-Othmer is directed to sulfamic acids and sulfamates. It is taught that sulfamic acid readily forms various metal sulfamates by reaction with the metal or the respective carbonates, oxides or hydroxides. Examples of metal salts include zinc, calcium, iron, nickel and ammonium salts (page 122).

Finding of Prima Facie Obviousness Rationale and Motivation (MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize a sulfamic acid salt in combination with a superphosphate and nitrate containing compounds. One of ordinary skill in the art would have been motivated to utilize these compounds as Woodhouse teach that sulfamic acid salts may be combined with other materials in preparing a fertilizer. These other ingredients include nitrogen containing liquors such as nitrates and superphosphates. As a general principle it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, the idea of combining them flows logically from their having been individually taught in the prior art. See *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) **MPEP 2144.06.**

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize various different sulfamic acid salts including iron sulfates. One of ordinary skill in the art would have been motivated to utilize various different sulfamic acid salts as Woodhouse teach that salts of sulfamic acid can be utilized and indicate such salts include ammonium, sodium, calcium, magnesium, potassium or the like salts. One of ordinary skill in the art would have been motivated to replace the

taught ammonium or calcium salts with iron as all are taught by Kirk-Othmer as functional equivalents. It would have been obvious to one of ordinary skill in the art to utilize carbonates, oxides or hydroxides of the various metals to form the salts as Kirk-Othmer teach that this how the formation of salts of sulfamic acid are typically formed.

Regarding claim 81, specific nitrates taught as being inclusive of the fertilizer compositions include calcium nitrate. This particular species with both a nitrate (which is also a N^{-3} moieties) and a calcium moiety.

Regarding claim 88, sulfamic acid fits the formula given of $HSO_3NR_4R_5$ wherein R_4 and R_5 are H.

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claims 91 and 96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhouse in view of Kirk-Othmer and in further view of Rodder (US Patent No. 5981441).

Applicant Claims

The instant application claims the solvent comprises an organic solvent. A specific organic solvent claimed is methanol.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Woodhouse and Kirk-Othmer are set forth above. Woodhouse teach fertilizer composition comprising salts of sulfamic acid. Kirk-Othmer teach method of making salts of sulfamic acid.

Ascertainment of the Difference Between Scope the Prior Art and the Claims
(MPEP §2141.012)

Woodhouse does not specify the incorporation of methanol. However, this deficiency is cured by Rodder.

Rodder is directed to the use of methanol for improving plant growth. It is taught that addition of aqueous solutions containing methanol with a nitrogen fertilizer improves the growth characteristics of plants (abstract and example).

Finding of Prima Facie Obviousness Rationale and Motivation
(MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to combine the teachings of Woodhouse, Kirk-Othmer and Rodder and utilize methanol in combination with the nitrogen fertilizer of Woodhouse. One of ordinary skill in the art would have been motivated to utilize methanol in combination with the aqueous nitrogen fertilizer of Woodhouse as Rodder teach that this combination improves the growth characteristics of plants. Therefore, one of ordinary skill in the art would have been motivated to add methanol in order to improve the growth characteristics as taught by Rodder.

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the

instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claims 94-95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhouse in view of Kirk-Othmer and in further view of Oeriu et al. (US Patent no. 3537838).

Applicant Claims

The instant application claims the composition further comprises one or more amino acids. The instant application claims that the one or more amino acids are sulfur-containing amino acids.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Woodhouse and Kirk-Othmer are set forth above. Woodhouse teach fertilizer composition comprising salts of sulfamic acid. Kirk-Othmer teach method of making salts of sulfamic acid.

Ascertainment of the Difference Between Scope the Prior Art and the Claims *(MPEP §2141.012)*

Woodhouse does not specify that amino acids or sulfur containing amino acids can be added. However, this deficiency is cured by Oeriu et al.

Oeriu et al. is directed to method for stimulating plant growth. It is taught that the free thiol (SH-group) set free in the plant organism causes proportionate growth and development of the plants and brings about richer harvests (abstract). Specific thiol

containing compounds taught include cysteine and homocysteine (column 2, lines 14-17).

Finding of Prima Facie Obviousness Rationale and Motivation (MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to combine the teachings of Woodhouse, Kirk-Othmer and Oeriu et al. and utilize cysteine or homocysteine in the fertilizer composition of Woodhouse. One of ordinary skill in the art would have been motivated to add cysteine or homocysteine as Woodhouse teach that usual fertilizer compositions can be utilized with the salts of sulfamic acids and Oeriu et al. teach that cysteine or homocysteine can be utilized for stimulating plant growth. As a general principle it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, the idea of combining them flows logically from their having been individually taught in the prior art. See *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) **MPEP 2144.06.**

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claims 80-82, 86-90, 93 and 98 are rejected under 35 U.S.C. 103(a) as being unpatentable over von Locquenghien et al. (EP 1033365A1).

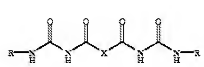
Applicant Claims

The instant application claims a composition comprising an amount of a reaction product of one or more sulfamic acid compounds and one or more water-insoluble macronutrient and/or micronutrient compounds, which reaction product is water-solution stable and an amount of phosphate and/or nitrate salts.

Specific claimed micronutrient compounds is iron carbonate.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Von Locquenghien et al. (wherein US Patent No. 6353134 is serving as the English language equivalent and therefore all sections will refer to those portion of the US Patent) is directed to the use of diureides of dicarboxylic acids of formula I:



in which

R is hydrogen or $SO_2OM^{\oplus}$,

M is lithium, sodium, potassium, cesium, ammonium, copper, silver, 0.5 iron, 0.5 calcium, 0.5 magnesium, 0.5 manganese, 0.5 zinc or 0.5 cobalt and

X is a saturated or monounsaturated, straight-chain or branched C_1-to C_8-alkyl which may be interrupted by oxygen or NH and which may have attached to it C_1-to C_4-alkoxy, hydroxyl and/or amino groups, as slow-release fertilizers

The process of making the diureide as claimed is formation of the sulfamic acid compound and then reaction with an aqueous M_2CO_3 wherein the M is lithium, sodium potassium cesium, ammonium, copper, silver, 0.5 iron, 0.5 calcium, 0.5 magnesium, 0.5

zinc or 0.5 cobalt (claim 6). It is taught that these compounds can be employed alone or as mixture or in combination with other customary fertilizers or additions. They can be formulated together with customary potash fertilizers such as potassium chloride and potassium nitrate, nitrogen fertilizers such as ammonium nitrate, nitrogen/phosphorous fertilizers such as ammonium phosphates, nitrogen/potash fertilizers such as potassium ammonium sulfate, phosphorous/potash fertilizers or nitrogen/phosphorous/potash fertilizers (columns 2-3, lines 62-67 and 1-8). It is taught the fertilizer can additionally comprise secondary nutrients such as calcium, sulfur and/or magnesium and trace elements such as boron, iron, manganese, copper, zinc and/or molybdenum (column 3, lines 9-15).

Ascertainment of the Difference Between Scope the Prior Art and the Claims
(MPEP §2141.012)

While Von Locquenghien et al. teach iron salts of sulfamic acid compounds (the diureides) can be combined with other customary fertilizers, Von Locquenghien et al. do not exemplify the iron salt of the sulfamic acid compound in combination with these other customary fertilizers.

Finding of Prima Facie Obviousness Rationale and Motivation
(MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize the iron salt of compound of formula I in a fertilizer composition. One of ordinary skill in the art would have been motivated to utilize the iron salt as it one of 13 different salts specifically taught and claimed by Von Locquenghien et al. It would have been obvious to one of ordinary skill in the art to try

any of the specific salts taught as a person with ordinary skill has good reason to pursue known options within his or her technical grasp. **Note: MPEP 2141 [R-6]** *KSR International CO. v. Teleflex Inc.* 82 USPQ 2d 1385 (Supreme Court 2007).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize the diureides of formula I in combination with other customary fertilizers such as phosphate and nitrates. One of ordinary skill in the art would have been motivated to utilize the diureides of formula I in combination with these customary fertilizers as it is specifically taught by Von Locquenghien et al. as being a suitable combination. Furthermore, one of ordinary skill in the art would have bee motivated to combine the diureides of formula I with other customary fertilizers as they are all known for being useful for the same purpose. As a general principle it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, the idea of combining them flows logically from their having been individually taught in the prior art. See *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) **MPEP 2144.06.**

Regarding claim 81, cations of the diureides include calcium and magnesium which would fall under the genus of claim 82. Furthermore, Von Locquenghien et al. indicate that the diureides can be utilized alone or as mixtures. Therefore, Von Locquenghien et al. teaches utilizing more than one of the diureides of formula I at a time or that additional nutrients such as calcium and magnesium can be added.

Furthermore, von Loquenghien et al. teach fertilizers include nitrates which is a N^{-3} moieties.

Regarding claim 88, sulfamic acid fits the formula given of $HSO_3NR_4R_5$ wherein R_4 is H and R_5 is hydrocarbonyl group containing 4 carbons. It is noted that the instant specification indicates that the hydrocabonyl groups include substituted hydrocarbons as well as hetero atom constituents, which would allow of the diureide compositions of formula I to be included in the genus of compounds described in the instant specification (page 19) as fall into the hydrocarbyl group.

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claims 91 and 96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Von Locquenghien et al. in view of Rodder.

Applicant Claims

The instant application claims the solvent comprises an organic solvent. A specific organic solvent claimed is methanol.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Von Locquenghien et al. are set forth above. Specifically Von Locquenghien et al. is directed to fertilizer compositions comprising diureides. It is taught that these compounds can be combined with customary fertilizer compositions.

Ascertainment of the Difference Between Scope the Prior Art and the Claims *(MPEP §2141.012)*

Woodhouse does not specify the incorporation of methanol. However, this deficiency is cured by Rodder.

Rodder is directed to the use of methanol for improving plant growth. It is taught that addition of aqueous solutions containing methanol with a nitrogen fertilizer improves the growth characteristics of plants (abstract and example).

Finding of Prima Facie Obviousness Rationale and Motivation (MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to combine the teachings of Von Locquenghien et al. and Rodder and utilize methanol in combination with the nitrogen fertilizer of Von Locquenghien et al. One of ordinary skill in the art would have been motivated to utilize methanol in combination with the aqueous nitrogen fertilizer of Von Locquenghien et al. as Rodder teach that this combination improves the growth characteristics of plants. Therefore, one of ordinary skill in the art would have been motivated to add methanol in order to improve the growth characteristics as taught by Rodder.

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the

instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claims 94 and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Von Locquenghien et al. in view of Oeriu et al.

Applicant Claims

The instant application claims the composition further comprises one or more amino acids. The instant application claims that the one or more amino acids are sulfur-containing amino acids.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Von Locquenghien et al. are set forth above. Specifically Von Locquenghien et al. is directed to fertilizer compositions comprising diureides. It is taught that these compounds can be combined with customary fertilizer compositions.

Ascertainment of the Difference Between Scope the Prior Art and the Claims *(MPEP §2141.012)*

Von Locquenghien et al. do not specify the incorporation of one or more amino acids or sulfur-containing amino acids. However, this deficiency is cured by Oeriu et al.

Oeriu et al. is directed to method for stimulating plant growth. It is taught that the free thiol (SH-group) set free in the plant organism causes proportionate growth and development of the plants and brings about richer harvests (abstract). Specific thiol

containing compounds taught include cysteine and homocysteine (column 2, lines 14-17).

Finding of Prima Facie Obviousness Rationale and Motivation (MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to combine the teachings of Von Locquenghien et al. and Oeriu et al. and utilize cysteine or homocysteine in the fertilizer composition of Von Locquenghien et al.. One of ordinary skill in the art would have been motivated to add cysteine or homocysteine as Von Locquenghien et al. teach that customary fertilizer compositions can be utilize with the diureides and Oeriu et al. teach that cysteine or homocysteine can be utilized for stimulating plant growth. As a general principle it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, the idea of combining them flows logically from their having been individually taught in the prior art. See *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) **MPEP 2144.06.**

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Other Matter

The examiner would like to point out that only trademarks should be capitalized in the claims. Therefore, unless the chemicals are trademarks, such as those found in claim 87, they should not be capitalized.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABIGAIL FISHER whose telephone number is (571)270-3502. The examiner can normally be reached on M-Th 9am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abigail Fisher
Examiner
Art Unit 1616

AF

/Mina Haghighatian/
Primary Examiner, Art Unit 1616